DEPARTMENT OF TRANSPORTATION
DES-OE MS #43
1727 30TH Street, 2ND Floor
Sacramento, CA 95816

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May 17, 2004

11-SD-15-M35.4/M38.7
11-080914
ACIM-015-4(192)21N
CMSTPL-6211(034)

Addendum No. 7

Dear Contractor:

This addendum is being issued to the contract for Building Construction in SAN DIEGO COUNTY IN SAN DIEGO FROM CAMINO DEL NORTE UNDERCROSSING TO 0.5 KM NORTH OF RANCHO BERNARDO ROAD UNDERCROSSING.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on June 10, 2004, instead of May 20, 2004.

This addendum is being issued to set a new bid opening date as shown herein and revise the Notice to Contractors and Special Provisions and the Proposal and Contract.

In the Special Provisions, Section 5-1.16, "PAYMENTS," item "C" of the second paragraph is revised as follows:

"C. Progress Schedule (Critical Path Method) $ 25,000.00."

In the Special Provisions, Section 5-1.16, "PAYMENTS," the following item is added after the last item of the second paragraph:

"D. Shared Field Data Management System $250,000.00."

In the Special Provisions, Section 5-1.24, "CERTIFIED PAYROLL RECORDS SUBMITTAL," is added following the Section 5-1.23, "INTERNET DAILY EXTRA WORK REPORT," which was added per Addendum No. 6, dated May 7, 2004, as attached.

In the Special Provisions, Section 10-1.16, "PROGRESS SCHEDULE (CRITICAL PATH METHOD)," is revised as attached.

In the Special Provisions, Section 10-1.16A, "SHARED FIELD DATA MANAGEMENT SYSTEM," is added following the Section 10-1.16, "PROGRESS SCHEDULE (CRITICAL PATH METHOD)," as attached.

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In the Proposal and Contract, the Engineer's Estimate Items 257 through 275 and 277 are revised, Items 279 and 280 are added and Item 278 is deleted as attached.

To Proposal and Contract book holders:

Replace pages 15 and 15A of the Engineer's Estimate in the Proposal with the attached revised pages 15 and 15A of the Engineer's Estimate. The revised Engineer's Estimate is to be used in the bid.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the proposal.

Submit bids in the Proposal and Contract book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

This office is sending this addendum by confirmed facsimile to all book holders to ensure that each receives it. A copy of this addendum and the modified wage rates are available for the contractor's use on the Internet Site:

http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addendum_page.html

If you are not a Proposal and Contract book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

ORIGINAL SIGNED BY

REBECCA D. HARNAGEL, Chief
Office of Plans, Specifications & Estimates
Office Engineer

Attachments

5-1.24 CERTIFIED PAYROLL RECORDS SUBMITTAL

Attention is directed to Section 7-1.01A(3), "Payroll Records," of the Standard Specifications and these special provisions. Payroll records shall be submitted to the Engineer directly using the Shared Field Data Management System in conformance with the provisions in Section 9-1.03C, "Records," of the Standard Specifications and these special provisions.

The Contractor shall submit electronically all certified payrolls, owner-operator listings, fringe benefits statements and statements of compliance for all subcontractors or shall allow the subcontractors access privileges to submit their records directly to the Shared Field Data Management System. Subcontractors allowed access privileges must first receive training to submit records to the Shared Field Data Management System. The Contractor or subcontractor shall submit the payroll records such that the items of work and extra work can be directly linked within the Shared Field Data Management System.

The Contractor shall submit payroll documents no later than the 15th of the following month for work performed in the previous month. The Shared Field Data Management System shall be configured to allow access privileges to the Resident Engineer and the District Labor Compliance Office. The District Labor Compliance Office will notify the Contractor of any payroll discrepancies.

Electronic submittal of certified payroll records, owner-operator listings, fringe benefit statements and statements of compliance sent using the Shared Field Data Management System will be deemed to be signed under penalty of perjury by the Contractor or subcontractor only after successful completion of the Shared Field Data Management System training.

Electronic submittal of certified payrolls using the Shared Field Data Management System shall not relieve the Contractor of the requirements of the California Labor Code, the Code of Federal Regulations, Title 29, Part 5 (29 CFR 5), and regulations of the Federal Highway Administration (FHWA) and the United States Department of Labor and the Engineer shall enforce any labor compliance violations.

Full compensation for submitting certified payroll records directly using the Shared Field Data Management System shall be included in the various contract items involved, and no separate payment will be made therefor.

10-1.16 PROGRESS SCHEDULE (CRITICAL PATH METHOD)

The Contractor shall submit to the Engineer practicable critical path method (CPM) progress schedules in conformance with these special provisions. Whenever the term "schedule" is used in this section it shall mean CPM progress schedule.

Attention is directed to "Payments" of Section 5 of these special provisions.

The provisions in Section 8-1.04, "Progress Schedule," of the Standard Specifications shall not apply.

DEFINITIONS

The following definitions shall apply to this section:

A. ACTIVITY.—A task, event or other project element on a schedule that contributes to completing the project. Activities have a description, start date, finish date, duration and one or more logic ties.
B. BASELINE SCHEDULE.—The initial schedule representing the Contractor's work plan on the first working day of the project.
C. CONTRACT COMPLETION DATE.—The current extended date for completion of the contract shown on the weekly statement of working days furnished by the Engineer in conformance with the provisions in Section 8-1.06, "Time of Completion," of the Standard Specifications.
D. CRITICAL PATH.—The longest continuous chain of activities for the project that has the least amount of total float of all chains. In general, a delay on the critical path will extend the scheduled completion date.
E. CRITICAL PATH METHOD (CPM).—A network based planning technique using activity durations and the relationships between activities to mathematically calculate a schedule for the entire project.
F. DATA DATE.—The day after the date through which a schedule is current. Everything occurring earlier than the data date is "as-built" and everything on or after the data date is "planned."
G. EARLY COMPLETION TIME.—The difference in time between an early scheduled completion date and the contract completion date.
H. FLOAT.—The difference between the earliest and latest allowable start or finish times for an activity.
I. MILESTONE.—An event activity that has zero duration and is typically used to represent the beginning or end of a certain stage of the project.
J. NARRATIVE REPORT.—A document submitted with each schedule that discusses topics related to project progress and scheduling.
K. NEAR CRITICAL PATH.—A chain of activities with total float exceeding that of the critical path but having no more than 10 working days of total float.
L. SCHEDULED COMPLETION DATE.—The planned project finish date shown on the current accepted schedule.
M. STATE OWNED FLOAT ACTIVITY.—The activity documenting time saved on the critical path by actions of the State. It is the last activity prior to the scheduled completion date.
N. TIME IMPACT ANALYSIS.—A schedule and narrative report developed specifically to demonstrate what effect a proposed change or delay has on the current scheduled completion date.
O. TOTAL FLOAT.—The amount of time that an activity or chain of activities can be delayed before extending the scheduled completion date.
P. UPDATE SCHEDULE.—A current schedule developed from the baseline or subsequent schedule through regular monthly review to incorporate as-built progress and any planned changes.

GENERAL REQUIREMENTS

The Contractor shall submit to the Engineer baseline, monthly update and final update schedules, each consistent in all respects with the time and order of work requirements of the contract. The project work shall be executed in the sequence indicated on the current accepted schedule.

Schedules shall show the order in which the Contractor proposes to carry out the work with logical links between time-scaled work activities, and calculations made using the critical path method to determine the controlling operation or operations. The Contractor is responsible for assuring that all activity sequences are logical and that each schedule shows a coordinated plan for complete performance of the work.

The Contractor shall produce schedules using computer software and shall furnish compatible software for the Engineer's exclusive possession and use. The Contractor shall furnish network diagrams, narrative reports, tabular reports and schedule data as parts of each schedule submittal.

Schedules shall include, but not be limited to, activities that show the following that are applicable to the project:

A. Project characteristics, salient features, or interfaces, including those with outside entities, that could affect time of completion.
B. Project start date, scheduled completion date and other milestones.
C. Work performed by the Contractor, subcontractors and suppliers.
D. Submittal development, delivery, review and approval, including those from the Contractor, subcontractors and suppliers.
E. Procurement, delivery, installation and testing of materials, plants and equipment.
F. Testing and settlement periods.
G. Utility notification and relocation.
H. Erection and removal of falsework and shoring.
I. Major traffic stage switches.
J. Finishing roadway and final cleanup.
K. State-owned float as the predecessor activity to the scheduled completion date.

Schedules shall have not less than 50 and not more than 500 activities, unless otherwise authorized by the Engineer. The number of activities shall be sufficient to assure adequate planning of the project, to permit monitoring and evaluation of progress, and to do an analysis of time impacts.

Schedule activities shall include the following:

A. A clear and legible description.
B. Start and finish dates.
C. A duration of not less than one working day, except for event activities, and not more than 20 working days, unless otherwise authorized by the Engineer.
D. At least one predecessor and one successor activity, except for project start and finish milestones.
E. Required constraints.
F. Codes for responsibility, stage, work shifts, location and contract pay item numbers.

The Contractor may show early completion time on any schedule provided that the requirements of the contract are met. Early completion time shall be considered a resource for the exclusive use of the Contractor. The Contractor may increase early completion time by improving production, reallocating resources to be more efficient, performing sequential activities concurrently or by completing activities earlier than planned. The Contractor may also submit for approval a cost reduction incentive proposal in conformance with the provisions in Section 5-1.14, "Cost Reduction Incentive," of the Standard Specifications that will reduce time of construction.

The Contractor may show a scheduled completion date that is later than the contract completion date on an update schedule, after the baseline schedule is accepted. The Contractor shall provide an explanation for a late scheduled completion date in the narrative report that is included with the schedule.

State-owned float shall be considered a resource for the exclusive use of the State. The Engineer may accrue State-owned float by the early completion of review of any type of required submittal when it saves time on the critical path. The Contractor shall prepare a time impact analysis, when requested by the Engineer, to determine the effect of the action in conformance with the provisions in "Time Impact Analysis" specified herein. The Engineer will document State-owned float by directing the Contractor to update the State-owned float activity on the next update schedule. The Contractor shall include a log of the action on the State-owned float activity and include a discussion of the action in the narrative report. The Engineer may use State-owned float to mitigate past, present or future State delays by offsetting potential time extensions for contract change orders.

The Engineer may adjust contract working days for ordered changes that affect the scheduled completion date, in conformance with the provisions in Section 4-1.03, "Changes," of the Standard Specifications. The Contractor shall prepare a time impact analysis to determine the effect of the change in conformance with the provisions in "Time Impact Analysis" specified herein, and shall include the impacts acceptable to the Engineer in the next update schedule. Changes that do not affect the controlling operation on the critical path will not be considered as the basis for a time adjustment. Changes that do affect the controlling operation on the critical path will be considered by the Engineer in decreasing time or granting an extension of time for completion of the contract. Time extensions will only be granted if the total float is absorbed and the scheduled completion date is delayed one or more working days because of the ordered change.

The Engineer's review and acceptance of schedules shall not waive any contract requirements and shall not relieve the Contractor of any obligation thereunder or responsibility for submitting complete and accurate information. Schedules that are rejected shall be corrected by the Contractor and resubmitted to the Engineer within 5 working days of notification by the Engineer, at which time a new review period of one week will begin.

Errors or omissions on schedules shall not relieve the Contractor from finishing all work within the time limit specified for completion of the contract. If, after a schedule has been accepted by the Engineer, either the Contractor or the Engineer discover that any aspect of the schedule has an error or omission, it shall be corrected by the Contractor on the next update schedule.

EQUIPMENT AND SOFTWARE

The Contractor shall provide for the State's exclusive possession and use a complete computer system specifically capable of creating, storing, updating and producing CPM schedules utilizing the latest hardware and software technology. Before delivery and setup of the computer system, the Contractor shall submit to the Engineer for approval a detailed list of all computer hardware and software the Contractor proposes to furnish. The minimum software and computer system to be furnished shall include the following:

A. A complete computer system, including keyboard, mouse, 530-mm color SVGA flat LCD monitor (1,024x768 pixels), current Intel Pentium IV micro processor chip, or equivalent or later;
B. Computer operating system software, compatible with the selected processing unit, for Windows 2000, or equivalent;
C. Minimum five hundred twelve (512) megabytes of random access memory (RAM);
D. A 20 gigabyte minimum hard disk drive, a 1.44 megabyte 90-mm floppy disk drive, 32x speed minimum CD-RW drive, Ethernet card, two UBCUSB ports, and 56K modem;
E. A color-ink-jet plotter with a minimum 36 Megabyte RAM, capable of 600 dots per inch color, 600 dots per inch monochrome, or equivalent. Capable of printing fully legible, time scaled charts, and network diagrams, in four colors, with a minimum size of 914-mm by 1219-mm (E size) and is compatible with the selected system. Plotter paper and ink cartridges will be provided throughout the contract. HP Designjet 1055 CM, equivalent or later.
F. CPM software shall be Primavera Project P3e/c for construction, or later;
G. Scheduler Analyzer Pro or equivalent – a suite of programs to assist in the schedule analysis, the latest version for Windows 2000, or later and;
H. Microsoft Office software, the latest version for Windows 2000, or later, and McAfee Virus software or equivalent.

The computer hardware and software furnished shall be compatible with that used by the Contractor for the production of the CPM progress schedule required by the Contract, and shall include original instruction manuals and other documentation normally provided with the hardware and software.

The Contractor shall furnish, install, set up, provide licenses for the all software programs, maintain and repair the computer hardware and provide software support ready for use at a location determined by the Engineer. The hardware and software shall be installed and ready for use by the first submission of the baseline schedule. The Contractor shall provide 24 hours of formal training for the Engineer and three other agents of the Department designated by the Engineer, in the use of the hardware and software to include schedule analysis, reporting and resource allocations. The training shall be performed by an authorized vendor of Primavera Project Planner.

All computer hardware and software furnished shall remain the property of the Contractor and shall be removed by the Contractor upon acceptance of the contract when no claims involving contract progress are pending. When claims involving contract progress are pending, computer hardware or software shall not be removed until final estimate has been submitted to the Contractor.

NETWORK DIAGRAMS, REPORTS AND DATA

The Contractor shall include the following for each schedule submittal:

A. Two sets of originally plotted, time-scaled network diagrams.
B. Two copies of a narrative report.
C. Two copies of each of 3 sorts of the CPM software-generated tabular reports.
D. One 1.44-megabyte 90 mm (3.5 inch) floppy diskette containing the schedule data.

The time-scaled network diagrams shall conform to the following:

A. Show a continuous flow of information from left to right.
B. Be based on early start and early finish dates of activities.
C. Clearly show the primary paths of criticality using graphical presentation.
D. Be prepared on E-size sheets, 860 mm x 1120 mm (34 inch x 44 inch).
E. Include a title block and a timeline on each page.

The narrative report shall be organized in the following sequence with all applicable documents included:

A. Contractor's transmittal letter.
B. Work completed during the period.
C. Identification of unusual conditions or restrictions regarding labor, equipment or material; including multiple shifts, 6-day work weeks, specified overtime or work at times other than regular days or hours.
D. Description of the current critical path.
E. Changes to the critical path and scheduled completion date since the last schedule submittal.
F. Description of problem areas.
G. Current and anticipated delays:

    1. Cause of delay.
    2. Impact of delay on other activities, milestones and completion dates.
    3. Corrective action and schedule adjustments to correct the delay.

H. Pending items and status thereof:

    1. Permits
    2. Change orders
    3. Time adjustments
    4. Non-compliance notices

I. Reasons for an early or late scheduled completion date in comparison to the contract completion date.

Tabular reports shall be software-generated and provide information for each activity included in the project schedule. Three different reports shall be sorted by (1) activity number, (2) early start and (3) total float. Tabular reports shall be 215 mm x 280 mm (8 1/2 inch x 11 inch) in size and shall include, as a minimum, the following applicable information:

A. Data date
B. Activity number and description
C. Predecessor and successor activity numbers and descriptions
D. Activity codes
E. Scheduled, or actual and remaining durations (work days) for each activity
F. Earliest start (calendar) date
G. Earliest finish (calendar) date
H. Actual start (calendar) date
I. Actual finish (calendar) date
J. Latest start (calendar) date
K. Latest finish (calendar) date
L. Free float (work days)
M. Total float (work days)
N. Percentage of activity complete and remaining duration for incomplete activities.
O. Lags
P. Required constraints

Schedule submittals will only be considered complete when all documents and data have been provided as described above.

PRE-CONSTRUCTION SCHEDULING CONFERENCE

The Contractor shall schedule and the Engineer will conduct a pre-construction scheduling conference with the Contractor's project manager and construction scheduler within 10 working days of the approval of the contract. At this meeting the Engineer will review the requirements of this section of the special provisions with the Contractor.

The Contractor shall submit a general time-scaled logic diagram displaying the major activities and sequence of planned operations and shall be prepared to discuss the proposed work plan and schedule methodology that comply with the requirements of these special provisions. If the Contractor proposes deviations to the construction staging of the project, then the general time-scaled logic diagram shall also display the deviations and resulting time impacts. The Contractor shall be prepared to discuss the proposal.

At this meeting, the Contractor shall additionally submit the alphanumeric coding structure and the activity identification system for labeling the work activities. To easily identify relationships, each activity description shall indicate its associated scope or location of work by including such terms as quantity of material, type of work, bridge number, station to station location, side of highway (such as left, right, northbound, southbound), lane number, shoulder, ramp name, ramp line descriptor or mainline.

The Engineer will review the logic diagram, coding structure, and activity identification system, and provide any required baseline schedule changes to the Contractor for implementation.

BASELINE SCHEDULE

Beginning the week following the pre-construction scheduling conference, the Contractor shall meet with the Engineer weekly until the baseline schedule is accepted by the Engineer to discuss schedule development and resolve schedule issues.

The Contractor shall submit to the Engineer a baseline schedule within 20 working days of approval of the contract. The Contractor shall allow 3 weeks for the Engineer's review after the baseline schedule and all support data are submitted. In addition, the baseline schedule submittal will not be considered complete until the computer software is delivered and installed for use in review of the schedule.

The baseline schedule shall include the entire scope of work and how the Contractor plans to complete all work contemplated. The baseline schedule shall show the activities that define the critical path. Multiple critical paths and near-critical paths shall be kept to a minimum. A total of not more than 50 percent of the baseline schedule activities shall be critical or near critical, unless otherwise authorized by the Engineer

The baseline schedule shall not extend beyond the number of working days specified in these special provisions. The baseline schedule shall have a data date of the first working day of the contract and not include any completed work to date. The baseline schedule shall not attribute negative float or negative lag to any activity.

If the Contractor submits an early completion baseline schedule that shows contract completion in less than 85 percent of the working days specified in these special provisions, the baseline schedule shall be supplemented with resource allocations for every task activity and include time-scaled resource histograms. The resource allocations shall be shown to a level of detail that facilitates report generation based on labor crafts and equipment classes for the Contractor and subcontractors. The Contractor shall use average composite crews to display the labor loading of on-site construction activities. The Contractor shall optimize and level labor to reflect a reasonable plan for accomplishing the work of the contract and to assure that resources are not duplicated in concurrent activities. The time-scaled resource histograms shall show labor crafts and equipment classes to be utilized on the contract. The Engineer may review the baseline schedule activity resource allocations using Means Productivity Standards or equivalent to determine if the schedule is practicable.

UPDATE SCHEDULE

The Contractor shall submit an update schedule and meet with the Engineer to review contract progress, on or before the first day of each month, beginning one month after the baseline schedule is accepted. The Contractor shall allow 2 weeks for the Engineer's review after the update schedule and all support data are submitted, except that the review period shall not start until the previous month's required schedule is accepted. Update schedules that are not accepted or rejected within the review period will be considered accepted by the Engineer.

The update schedule shall have a data date of the twenty-first day of the month or other date established by the Engineer. The update schedule shall show the status of work actually completed to date and the work yet to be performed as planned. Actual activity start dates, percent complete and finish dates shall be shown as applicable. Durations for work that has been completed shall be shown on the update schedule as the work actually occurred, including Engineer submittal review and Contractor resubmittal times.

The Contractor may include modifications such as adding or deleting activities or changing activity constraints, durations or logic that do not (1) alter the critical path(s) or near critical path(s) or (2) extend the scheduled completion date compared to that shown on the current accepted schedule. The Contractor shall state in writing the reasons for any changes to planned work. If any proposed changes in planned work will result in (1) or (2) above, then the Contractor shall submit a time impact analysis as described herein.

TIME IMPACT ANALYSIS

The Contractor shall submit a written time impact analysis (TIA) to the Engineer with each request for adjustment of contract time, or when the Contractor or Engineer consider that an approved or anticipated change may impact the critical path or contract progress.

The TIA shall illustrate the impacts of each change or delay on the current scheduled completion date or internal milestone, as appropriate. The analysis shall use the accepted schedule that has a data date closest to and prior to the event. If the Engineer determines that the accepted schedule used does not appropriately represent the conditions prior to the event, the accepted schedule shall be updated to the day before the event being analyzed. The TIA shall include an impact schedule developed from incorporating the event into the accepted schedule by adding or deleting activities, or by changing durations or logic of existing activities. If the impact schedule shows that incorporating the event modifies the critical path and scheduled completion date of the accepted schedule, the difference between scheduled completion dates of the two schedules shall be equal to the adjustment of contract time. The Engineer may construct and utilize an appropriate project schedule or other recognized method to determine adjustments in contract time until the Contractor provides the TIA.

The Contractor shall submit a TIA in duplicate within 15 working days of receiving a written request for a TIA from the Engineer. The Contractor shall allow the Engineer 2 weeks after receipt to approve or reject the submitted TIA. All approved TIA schedule changes shall be shown on the next update schedule.

If a TIA submitted by the Contractor is rejected by the Engineer, the Contractor shall meet with the Engineer to discuss and resolve issues related to the TIA. If agreement is not reached, the Contractor will be allowed 15 days from the meeting with the Engineer to give notice in conformance with the provisions in Section 9-1.04, "Notice of Potential Claim," of the Standard Specifications. The Contractor shall only show actual as-built work, not unapproved changes related to the TIA, in subsequent update schedules. If agreement is reached at a later date, approved TIA schedule changes shall be shown on the next update schedule. The Engineer will withhold remaining payment on the schedule contract item if a TIA is requested by the Engineer and not submitted by the Contractor within 15 working days. The schedule item payment will resume on the next estimate after the requested TIA is submitted. No other contract payment will be retained regarding TIA submittals.

FINAL UPDATE SCHEDULE

The Contractor shall submit a final update, as-built schedule with actual start and finish dates for the activities, within 30 days after completion of contract work. The Contractor shall provide a written certificate with this submittal signed by the Contractor's project manager and an officer of the company stating, "To my knowledge and belief, the enclosed final update schedule reflects the actual start and finish dates of the actual activities for the project contained herein." An officer of the company may delegate in writing the authority to sign the certificate to a responsible manager.

RETENTION

The Department will retain an amount equal to 25 percent of the estimated value of the work performed during each estimate period in which the Contractor fails to submit an acceptable schedule conforming to the requirements of these special provisions as determined by the Engineer. Schedule retentions will be released for payment on the next monthly estimate for partial payment following the date that acceptable schedules are submitted to the Engineer or as otherwise specified herein. Upon completion of all contract work and submittal of the final update schedule and certification, any remaining retained funds associated with this section, "Progress Schedule (Critical Path Method)", will be released for payment. Retentions held in conformance with this section shall be in addition to other retentions provided for in the contract. No interest will be due the Contractor on retention amounts.

PAYMENT

Progress schedule (critical path method) will be paid for at a lump sum price. The contract lump sum price paid for progress schedule (critical path method) shall include full compensation for furnishing all labor, material, tools, equipment, and incidentals, including computer software, and for doing all the work involved in preparing, furnishing, and updating schedules, and instructing and assisting the Engineer in the use of computer software, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Payments for the progress schedule (critical path method) contract item will be made progressively as follows:

A. A total of 25 percent of the item amount or a total of 25 percent of the amount listed for progress schedule (critical path method) in "Payments" of Section 5 of these special provisions, whichever is less, will be paid upon achieving all of the following:

    1. Completion of 5 percent of all contract item work.
    2. Acceptance of all schedules and TIAs required to the time when 5 percent of all contract item work is complete.
    3. Delivery of schedule software to the Engineer.
    4. Completion of required schedule software training.

B. A total of 50 percent of the item amount or a total of 50 percent of the amount listed for progress schedule (critical path method) in "Payments" of Section 5 of these special provisions, whichever is less, will be paid upon completion of 25 percent of all contract item work and acceptance of all schedules and TIAs required to the time when 25 percent of all contract item work is complete.

C. A total of 75 percent of the item amount or a total of 75 percent of the amount listed for progress schedule (critical path method) in "Payments" of Section 5 of these special provisions, whichever is less, will be paid upon completion of 50 percent of all contract item work and acceptance of all schedules and TIAs required to the time when 50 percent of all contract item work is complete.

D. A total of 100 percent of the item amount or a total of 100 percent of the amount listed for progress schedule (critical path method) in "Payments" of Section 5 of these special provisions, whichever is less, will be paid upon completion of all contract item work, acceptance of all schedules and TIAs required to the time when all contract item work is complete, and submittal of the certified final update schedule.

If the Contractor fails to complete any of the work or provide any of the schedules required by this section, the Engineer shall make an adjustment in compensation in conformance with the provisions in Section 4-1.03C, "Changes in Character of Work," of the Standard Specifications for the work not performed. Adjustments in compensation for schedules will not be made for any increased or decreased work ordered by the Engineer in furnishing schedules.

10-1.16A SHARED FIELD DATA MANAGEMENT SYSTEM

The Contractor shall provide a complete computer system (hardware and software) for the State's exclusive possession and use, specifically capable of providing a Shared Field Data Management System for the Contractor to submit certified payroll records and joint tentative agreements for processing of extra work billing.

Attention is directed to Section 5-1.24, "Certified Payroll Records Submittal," and Section 5-1.23, "Internet Daily Extra Work Report," of these special provisions.

The computer hardware and software furnished shall be used by or be compatible with that used by the Contractor.

The operating system shall have a centralized storage of all project information and readily incorporate existing standard forms used by the State construction administration process. The system shall have the capability of providing partitions/ firewalls or other technologies to define the levels of access rights.

The Contractor shall use the Shared Field Data Management System for submittal of certified payroll records and joint tentative agreements for extra work billing which may include, but are not limited to, CPM scheduling, submittals, transmittals, materials on hand, request for testing, Request for Information (RFI), letters, and memorandums created and received during the life of the project.

The Shared Field Data Management System shall have all project information available including but not limited to the Special Provisions, Standard Specifications, Standard Plans, Materials Information, Contract Plans and shall be updated with the latest Phase of plan changes and contract change order plan changes, Prevailing Wage Rates, latest Labor Surcharge and Equipment Rental Rates, contractor and sub-contractor equipment, labor rates for all contractor and sub-contractor personnel

Attention is directed to "Payments" of Section 5 of these special provisions.

COMPUTER SYSTEM

The Contractor shall provide and maintain a complete computer server system or hosted server, data management software, portable computer hardware and wireless Internet communication service necessary for access electronically to the Shared Field Data Management System. The system shall be accessible to the Contractor, State administrative personnel and sub-contractors through the Internet.

ACCESS REQUIREMENTS

User accounts shall be provided for Contractor staff and assignees such as subcontractors as determined by the Contractor. State Staff such as the Resident Engineer and Labor Compliance staff shall have access to all submittals of certified payrolls for labor compliance verification. Contractor s representative including subcontractors and State staff including field inspectors shall have access to the joint tentative agreement form to be approved by one representative of the Contractor and one representative of the State for processing extra work billing. The system shall be capable of defining the distribution for "full access" and "read only access" rights as defined prior to submittal of any information. All user accounts must be password protected.

Operational Recovery Requirements

The system shall at a minimum, incrementally back up all project data on a daily basis and perform a full backup of all data on a weekly basis. Backup media shall be stored off-site on a weekly basis and the weekly full backups must be kept for until 30 days after the acceptance of the final estimate. The system must normally be available for continualy use. In the instance of a hardware problem, the Contractor must be able to return the system to operation within 2 working days.

Four (4) archived backup copies of the Contractor's data and shared data shall be provided to the Contractor, and four (4) archived backup copies of the State's data and shared data shall be provided to the State at the completion of all work requiring input into the Shared Field Data Management System.

SOFTWARE REQUIREMENTS

Provide read-only access to all users of project information including but not limited to the Special Provisions, Standard Specifications, Standard Plans, Materials Information, Contract Plans and shall be updated with the latest Phase of plan changes and contract change order plan changes, Prevailing Wage Rates, latest Labor Surcharge and Equipment Rental Rates, contractor and sub-contractor equipment, labor rates for all contractor and sub-contractor personnel.

Provide automated routing or notification to all users of updates to the project information such as but not limited to updates of the latest Phase of plan changes, contract change order plan changes,

Provide automated routing of certified payrolls to the Resident Engineer and State Labor Compliance and provide notification to the originator of the receipt of the payrolls.

Provide issue tracking and logging capability where the Contractor or the State can determine the status and resolution of issues. Provide the ability to search for words or phrases stored in text anywhere in the database. Provide the ability to search for records by a range of dates (beginning and end).

The system shall be capable of allowing access to thirty (30) concurrent users. Any licenses or annual maintenance renewal fees shall be provided until 30 days after the final estimate has been accepted by the yContractor. The software to implement the Shared Field Data Management System must be a commercially available software package.

NETWORK COPIER OR SERVICE

The network copier shall be a multifunction, Adobe Postscript Level 3 or compatible, copier/scanner/laser printer with a minimum of 128 megabytes RAM,. The laser printer shall print in color at 24 dots per millimeter (600 dots per inch) resolution. The scanner shall have a minimum resolution of 24 dots per millimeter x 24 dots per millimeter (600 dots per inch x 600 dots per inch), a minimum of 24 bit color depth, scan color or black and white documents at a minimum of 20 pages pyer minute and shall be capable of scanning images to the TIF (tagged image format) and PDF (Adobe Portable Document Format) file formats. The scanner shall have the ability for the user to name the scanned documents using the network copier keypad. The network copier shall be able to scan, copy and print in letter, legal and 280 mm x 432 mm (11" x 17") paper sizes and shall have the capability of being connected to a network with 10/100 Mbit Ethernet. Or an equivalent copier service to copy and have the documents electronically available within 2 working days after the documents are provided.

PORTABLE COMPUTER HARDWARE REQUIREMENTS

The contractor shall provide for the State's exclusive possession and use thirty (30) complete portable computers with wireless capabilities. The minimum computer to be furnished shall be complete with keyboard, mouse, monitor, installed car/truck mount or stand, installed car power adapter or power inverter. The system shall be from those identified by the Gartner Group as Tier 1 and shall conform to the following requirements:

A. Latest industry-available Intel Pentium, with rugged casing and waterproof keyboard or equivalent.
B. Latest computer operating system software compatible with the selected processing unit, for Windows NT/Windows 2000 with 15 client licenses or equivalent.
C. Minimum 40 gigabyte hard disk drive, and 2 gigabytes of Random Access Memory (RAM).
D. A 430 mm (14") minimum, color monitor capable of at least 1,024 x 768 pixels or equivalent.
E. General software shall be the latest versions of Microsoft Office Professional, McAfee VirusScan virus protection or equivalent and tape backup software. The general software shall be compatible with the hardware provided.
F. Be compatible with and meet the Shared Field Data Management System vendor's minimum recommendation for use as a client system.
G. Provide a 10 Base T NIC card
H. Provide wireless connectivity utilizing industry standard GPRS technology or Sprint 3G.

PRE-CONSTRUCTION CONFERENCE

The Contractor shall schedule and the Engineer will conduct a pre-construction conference with the Contractor's project manager within 5 days of the approval of the contract. At this meeting the Engineer will review the requirements of this section of the special provisions with the Contractor.

The Contractor shall be prepared to discuss the proposed work plan and methodology for the Shared Field Data Management System, that comply with the requirements of these special provisions.

DELIVERY AND SETUP

Attention is directed to "Pre-construction Conference" and "Training" of these special provisions.

Before delivery and setup of the computer system, the Contractor shall submit, for approval by the Engineer, a detailed list of the computer hardware and software the Contractor proposes to furnish. The Engineer will have 3 days to review and approve the Contractor's proposal.

Upon approval by the Engineer, the Contractor or his approved representative shall furnish, install, set up, maintain, and repair the computer system ready-for-use, and network copier service or provide network copier supplies (excluding paper) as necessary during the course of the project at a location determined by the Engineer. The Shared Field Data Management System technical support and repair shall be performed by a 3rd party vendor selected by the Contractor. The hardware and software shall be installed and ready for use prior to the first chargeable working day on the contract. Software maintenance, including licensing and other fees shall be maintained for the duration of the project until 30 days after receiving of the final estimate by the Contractor.

The Contractor shall instruct and assist the Engineer in the use of the hardware and software. Hardware repairs shall be made within 48 hours of notification by the Engineer, or replacement equipment shall be furnished and installed by the Contractor until repairs have been completed.

Computer hardware and software furnished shall remain the property of the Contractor and shall not be removed until 30 days after the Contractor has received the final estimate, or as authorized by the Engineer.

The Contractor shall furnish software and all original software instruction manuals to the Engineer. The State will compensate the Contractor in conformance with the provisions in Section 4-1.03, "Extra Work," of the Standard Specifications for replacement of software which is damaged, lost or stolen after delivery to the Engineer.

TRAINING

Attention is directed to "Pre-construction Conference" and "Delivery and Setup" of these special provisions.

After approval of the Shared Field Data Management System by the Engineer and prior to the first chargeable working day on the contract, the Contractor shall provide an initial 8 hour training session or as recommended by the vender for initial setup of the system.

The Contractor shall provide a total of 10 training sessions, at 4 hours per session during the duration of the contract. The Contractor can expect subsequent training sessions to be distributed throughout the duration of the contract until the total number of sessions have been completed. Each training session shall accommodate up to 8 Stae employees. Training sessions shall be at a location, date and time acceptable to the Engineer.

The Trainer shall be provided by the Vendor and approved by the Engineer.

The Shared Field Data Management System shall also provide a method of exporting all data to a relational database, keeping all the existing relationships intact. This export function should be accessible by the user and should be able to be performed at any time by the user.

COST BREAK-DOWN

The Contractor shall include a Shared Field Data Management System Cost Break-Down which itemizes the contract lump sum for the Shared Field Data Management System. The Contractor shall use the Shared Field Data Management System Cost Break-Down provided in this section as the basis for the cost break-down. The Contractor shall use the Shared Field Data Management System Cost Break-Down to identify items, quantities and values for the Shared Field Data Management System. The Contractor shall be responsible for the accuracy of the quantities and values used in the cost break-down. Partial payment for the item of Shared Field Data Management System will not be made until the Shared Field Data Management System Cost Break-Down is approved by the Engineer.

The sum of the amounts for the items of work listed in the Shared Field Data Management System Cost Break-Down shall be equal to the contract lump sum price bid for Shared Field Data Management System. Overhead and profit, except for time-related overhead, shall be included in each individual item listed in the cost break-down.

SHARED FIELD DATA MANAGEMENT SYSTEM COST BREAK-DOWN
Contract No. 11-080914

ITEM	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY	VALUE	AMOUNT
SD-1	Computer Server System for Shared Field Data Management System	EA	1		
SD-2	Initial Set-up of Project including initial training	EA	1		
NC-1	Network copier or service	EA	1		
SD-3	Computer Hardware for Shared Field Data Management System	EA	30		
SD-4	Computer Software for Shared Field Data Management System	EA	30		
SD-5	Software Technical support for Server/Client for Shared Field Data Management System	HR	300		
SD-6	Hardware maintenance for Shared Field Data Management System	HR	150		
SD-7	Software licenses through contract duration	EA	30		
TR-1	Computer Software Training Sessions for – 4 hour sessions	EA	10		

TOTAL _____

The approved cost break-down will be used to determine partial payments during the progress of the work and as the basis for calculating the adjustment in compensation for the item of Shared Field Data Management System due to increases or decreases of quantities ordered by the Engineer. When an ordered change increases or decreases the quantities of an approved cost break-down item, the adjustment in compensation will be determined in the same manner specified for increases and decreases in the quantity of a contract item of work in conformance with the provisions in Section 4-1.03B, "Increased or Decreased Quantities," of the Standard Specifications. If an ordered change requires a new item which is not on the approved cost break-down, the adjustment in compensation will be determined in the same manner specified for extra work in conformance with Section 4-1.03D, "Extra Work," of the Standard Specifications.

If requested by the Contractor and approved by the Engineer, changes to the Shared Field Data Management System listed in the approved cost break-down, including addition of new computer hardware and software, will be allowed. If the requested changes result in a net cost increase to the lump sum price for Shared Field Data Management System, an adjustment in compensation will be made without change to the Shared Field Data Management System item. The net cost increase to the Shared Field Data Management System item will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications.

PAYMENT

The contract lump sum price paid for shared field data management system shall include full compensation for furnishing all labor, material, tools, equipment, and incidentals, including computer software, and for doing all the work involved in providing and maintaining the shared field data management system, and instructing and assisting the Engineer in the use of computer software, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

If the Contractor fails to complete any of the work or providing and maintaining the Shared Field Data Management System required by this section, the Engineer will make an adjustment in compensation in conformance with the provisions in Section 4-1.03C, "Changes in Character of Work," of the Standard Specifications for the work not performed. Adjustments in compensation for Shared Field Data Management System will not be made for any increased or decreased work ordered by the Engineer in furnishing Shared Field Data Management System.

ENGINEER'S ESTIMATE
11-080914

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
241 (S)	860761	LIGHTING CONDUIT (BRIDGE)	M	360		
242 (S)	860792	COMMUNICATION CONDUIT (BRIDGE)	M	360		
243 (S)	860796	SPRINKLER CONTROL CONDUIT (BRIDGE)	M	360		
244 (S)	860931	TRAFFIC MONITORING STATION (LOCATION 1)	LS	LUMP SUM	LUMP SUM	
245 (S)	860932	TRAFFIC MONITORING STATION (LOCATION 2)	LS	LUMP SUM	LUMP SUM	
246 (S)	032160	FIBER OPTIC COMUNICATION SYSTEM	LS	LUMP SUM	LUMP SUM	
247 (S)	861101	RAMP METERING SYSTEM (LOCATION 1)	LS	LUMP SUM	LUMP SUM	
248 (S)	861102	RAMP METERING SYSTEM (LOCATION 2)	LS	LUMP SUM	LUMP SUM	
249 (S)	861103	RAMP METERING SYSTEM (LOCATION 3)	LS	LUMP SUM	LUMP SUM	
250 (S)	861104	RAMP METERING SYSTEM (LOCATION 4)	LS	LUMP SUM	LUMP SUM	
251 (S)	861105	RAMP METERING SYSTEM (LOCATION 5)	LS	LUMP SUM	LUMP SUM	
252 (S)	861106	RAMP METERING SYSTEM (LOCATION 6)	LS	LUMP SUM	LUMP SUM	
253 (S)	861107	RAMP METERING SYSTEM (LOCATION 7)	LS	LUMP SUM	LUMP SUM	
254	BLANK					
255	150206	ABANDON CLUVERT	EA	3		
256	BLANK					
257	049717	EARTH RETAINING STRUCTURE, LOCATION 9	M2	1080		
258	049718	EARTH RETAINING STRUCTURE, LOCATION 10	M2	2145		
259 (S)	033026	ANTI-GRAFFITI PROTECTIVE COATING	M2	2370		
260 (S)	033035	COBBLESTONE TEXTURE	M2	2370		

ENGINEER'S ESTIMATE

11-080914

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
261	731517	MINOR CONCRETE (GUTTER)	M	294		
262	033027	CONCRETE BARRIER (TYPE KA26A MODIFIED)	M	280		
263 (S)	839532	CABLE ANCHOR ASSEMBLY (BREAKAWAY, TYPE B)	EA	10		
264 (S)	839551	TERMINAL SECTION (TYPE B)	EA	10		
265 (S)	839553	END SECTION	EA	10		
266	192050	STRUCTURE EXCAVATION (TIEBACK WALL)	M3	5400		
267	192055	STRUCTURE EXCAVATION (SOIL NAIL WALL)	M3	3700		
268	193026	STRUCTURE BACKFILL (TIEBACK WALL)	M3	380		
269	193028	STRUCTURE BACKFILL (SOIL NAIL WALL)	M3	110		
270	197060	SOIL NAIL ASSEMBLY	M	18 000		
271	500050	TIEBACK ANCHOR	EA	327		
272	510050	STRUCTURAL CONCRETE	M3	1625		
273	520101	BAR REINFORCING STEEL	KG	248 000		
274	530100	SHOTCRETE	M3	1170		
275	049719	MINOR CONCRETE CHANNEL (TYPE A)	M2	877		
276	597601	PREPARE AND STAIN CONCRETE	M2	2370		
277	839568	TERMINAL ANCHOR ASSEMBLY (TYPE SFT)	EA	6		
278	BLANK					
279	033041	SHARED FIELD DATA MANAGEMENT SYSTEM	LS	LUMP SUM	LUMP SUM	
280	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

TOTAL BID: _____